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CULTURAL RESOURCE INVENTORY AND EVALUATION

THE GUISTIS MINE

FOR

THE MONTANA DEPARTMENT OF STATE LANDS

HELENA, MONTANA

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CULTURAL RESOURCE INVENTORY AND EVALUATION

THE GUISTIS MINE

FOR

THE MONTANA DEPARTMENT OF STATE LANDS

HELENA, MONTANA

BY

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CULTURAL RESOURCE DIVISION
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BUTTE, MONTANA 59702

SEPTEMBER 21, 1982

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INTRODUCTION

In September of 1982 the Mineral Research Center in Butte, Montana was contacted by the Montana Department of State Lands (DSL) and requested to perform a cultural resource inventory and evaluation of several abandoned coal mines in Cascade County, Montana (Figure 1).

In the interest of public safety and health the DSL plans to close all open adits, remove remaining structures and reclaim disturbed areas at the mines through removal, contouring and/or revegetation.

The following report will describe the physical setting, the historic background and the present state of the sites. An evaluation as to the eligibility of the sites to the National Register of Historic Places and a summary of projected impact on the sites will be given.

All field notes, photographs and supportive information resulting from the cultural resource fieldwork will be maintained at the Mineral Research Center.

Field investigations were conducted on September 9, 1982. The Principal Investigator and Project Director is Paul Anderson.

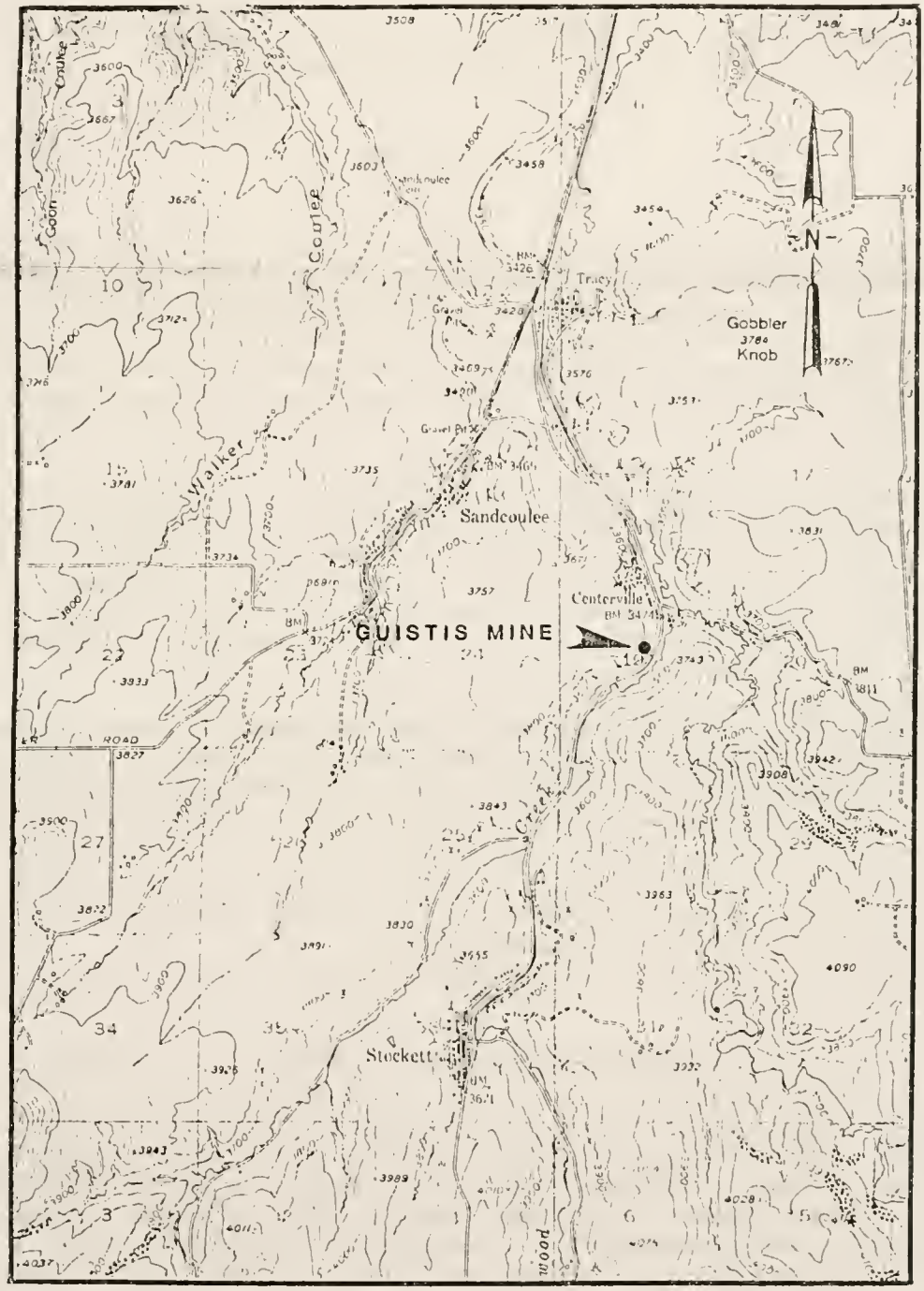


Figure 1. Map showing location of project area. (USGS Quadrangle Stockett, Mont. N4715-W11100/15 - 1955, 1:62500).

LEGAL DESCRIPTION OF THE GUISTIS MINE

SW1/4 NE1/4 Section 19, T19N R5E

METHODOLOGY

The project area was carefully examined by the project team and the site was recorded, mapped and photographed. Undisturbed areas were sysmatically examined for possible prehistoric activities. Much of the ground was covered by dense vegetation making survey difficult. Due to the disturbed nature of the areas it would seem likely that had there been any prehistoric evidence it would have long since been buried or destroyed.

The state site files at the University of Montana; the Montana Historical Society's Historic Preservation Office files; and the Montana Fish and Game Commission's Historic Sites Compendium were searched for previously recorded sites in the area. No prehistoric sites were in the immediate vicinity of the DSL project mines. Historic sites in the area consist of other abandoned coal mines and will not be impacted by the current DSL mine reclamation project.

Documentary evidence on individual mines was sketchy at best. Most of the modern records of the mine safety inspection office were destroyed some time ago and there is very little in the way of records for specific mines during the boom period from 1890 to 1930. Personal interviews were conducted with several of the residents in the area who worked in the mines. Dates and names gained from these interviews should be considered tentative - understandable given the number of years that have elapsed since the mines were in operation.

GENERAL FEATURES AND PHYSIOGRAPHY OF THE PROJECT AREA

The Belt and Sand Coulee mines are located within the Great Falls coal field. This is a transitional region between the plains and the mountains and thus contains features characteristic of both topographies. The Great Falls coal field lies between the Highwood Mountains to the north and the Little Belt Mountains to the south. The area between the two mountain ranges is a high plateau sloping gently northward and traversed by numerous mountain streams which have created relatively deep, narrow valleys. This is especially true of the area west of Otter Creek. These streams have cut through and exposed the coal beds making them accessible to early development. The major drainages in this area include

the Smith River, Sand Coulee, Belt Creek and Otter Creek (Fisher 1906).

The general elevation for the area is between 3,500 and 4,000 feet with the lowest point being along the Missouri River at about 3,000 feet while the highest summits of the Little Belt Mountains rise to altitudes of 4,500 to 5,000 feet.

Climate

The Great Falls region is characterized by a climate ranging from extremes of bitterly cold winters to short but hot summers. Weather patterns on a daily basis are highly variable and are shaped by such factors as topography, sun exposure, precipitation, temperature, and prevailing winds. The mountain ranges in the region affect the weather since air currents along the fronts carry rains in the summer and heavy snow falls in the winter which provide water for the area's streams, and moisture for crops making the area one of the nation's prime wheat producing regions. The region is also known for its "chinook" winds during the winter which are a frequent phenomenon. Average precipitation is 15 to 16 inches annually although perennial surface water is generally available throughout the region.

Vegetation

Vegetation types fall within the Northern Grassland zone with a large percentage of the area under cultivation for wheat and hay. Other species include: Rhus, chokecherry, snowberry, fringed sagewort, wild rye, Japanese brome, cheatgrass, quackgrass, bluebunch wheatgrass, bluegrass, cactus, green needlegrass, rubber rabbit brush, sagebrush and cottonwood trees.

Geology

The general geology of the Great Falls-Lewistown coal field is best described by Silverman and Harris as follows:

> The lower part of the Morrison Formation, a terrestrial section consisting of 45 to 200 feet of varicolored mudstone and shale interbedded with lenses of gray sandstone and limestone, was deposited upon an emergent surface of marine Jurassic rocks. In a near-desert, interior-drainage environment, the upper Morrison and Kootenai rocks of central Montana then accumulated as lacustrine and flood-plain deposits. The upper Morrison consists of 5 to 50 feet of black shale intercalated with coal as much as 12 feet thick. The coal is depositionally discontinuous, having accumulated to greatest thickness in relatively small swamplands marginal to one or more lakes that occupied most of central Montana during late Morrison time.
>
> The kinds of leaf compressions in black shale associated with coal indicate a xeric climate around the interior lakes, which eventually drained or filled, exposing the carbonaceous matter

to subaerial erosion. After renewed uplift to the west, or increase in local aridity, or both, easterly flowing streams deposited and reworked the alluvial basal Kootenai sandstone over the entire area. In places small channel cutouts developed in the peat, but the porous organic remains produced a surface generally resistant to erosion. Regionally, basal Kootenai sandstone rests unconformably on upper Morrison beds, although the unconformity is relatively small. Compaction rather than erosional features characterize the Morrison-Kootenai contact.

The Great Falls-Lewistown field contains an estimated 750 million short tons of bituminous and subbituminous coal reserves in seams more than 14 inches thick. The nature and distribution of this coal make it amenable to future use of coal-steam-electric generation in central Montana (Silverman & Harris 1967:iv).

HISTORIC BACKGROUND

The presence of coal in the area was first observed by the Lewis and Clark expedition as they traveled up the Missouri River. On April 22, 1805 Lewis noted in his journal:

> Coal or carbonated wood pumice stone lava and other mineral appearances still continue. the coal appears to be of better quality; I exposed a specimen of it to the fire and found that it birnt [sic] tolerably well, it afforded but little flame or smoke, but produced a hot and lasting fire (DeVoto 1953:98).

However, seventy-two years would elapse before this coal was first developed. A transplanted Pennsylvanian, John K. Castner, recognized the potential of the exposed coal seams along Belt Creek and filed claims on the bituminous coal-bearing lands in the area in 1877. For the next few years Castner operated a small "wagon" mine and hauled coal in mule team wagons to Fort Benton for use by the steamboats and the local community. Coal was also initially mined at nearby Sand Coulee during this period and was hauled by wagons to Fort Benton. By 1885 the combined production from the Sand Coulee and Belt mines was 1,900 tons, with 1,200 tons coming from Belt. The coal trade was apparently profitable since the Fort Benton "River Press" in September 1887 reported that large piles of coal from Belt and Sand Coulee were on the levees for use by the steamboats (Chadwick 1973; Cascade County Historical Society 1981; Stober 1979).

Major development of the Belt-Sand Coulee coal fields would not occur, however, until the coming of the railroad. In 1887 Jim Hill's St. Paul, Minneapolis, and Manitoba Railroad (soon to be called The Great Northern Railway) laid tracks all the way from Minot, North Dakota to the new town of Great Falls in one season. By 1888 a branch line had been opened to Sand Coulee and in 1891 the railroad passed through Belt on its way to the silver mines at Neihart. Coal production expanded to fill the increasing

consumption by the railroads and the growing community of Great Falls. Coal demand increased even further when the Anaconda Company's copper smelter was opened in Great Falls in 1892. When Castner first opened his Belt mine he built several experimental coke ovens. Later a hundred beehive coke ovens - each with a capacity of three tons - were in operation to supply the Great Falls smelter. Unfortunately, the benches of coking coal could not be economically separated from the non-coking coal and the ovens were closed down. During the 1950s these ovens were dismantled to salvage the bricks (Chadwick 1973; Stober 1979).

The major economic force in the Belt-Sand Coulee area was the Anaconda Mining Company which determined the demand for coal and also owned and operated several of the largest mines. In 1889 the Company bought the Castner Coal and Coke Company in Belt and operated it until 1913. At Sand Coulee the company acquired the Lochray Coal Company in 1914 and ran it for the next ten years (Morgan 1966).

Other major mines in the area would include the G. W. Merkle Mine near Belt and the Nelson Mine at Sand Coulee. These two mines furnished a large share of the coal used by the Great Northern Railroad. The railroad also operated its own mine at Stockett in the 1890s under a subsidiary, the Cottonwood Coal Company. This same company developed a mine at Giffen, a few miles south of Stockett, during the early 1930s which remained in production until 1946 when the Great Northern took the last of its steam locomotives out of service (Morgan 1966).

Almost all the area's mines were drift mines - so named because the coal could be reached by horizonal "drifts" driven into the coal from the side of a hill. The room and pillar method of mining the coal was generally used which was not the most efficient for coal recovery but did save on labor costs (Stober 1979).

The coal boom in the Belt and Sand Coulee area came to an end during the 1920s. The coal seams were running shallow with a greater percentage of rock, making it increasingly more expensive to mine. More important was the decline in demand. The Anaconda refinery ceased to use coal or coke for its furnaces; domestic users began to switch to natural gas and fuel oil; and the Great Northern Railroad began to use oil-burning steam locomotives and eventually would convert to diesel engines (Chadwick 1973).

By the 1930s all the major mines had closed except for the Cottonwood Coal Company's mine at Giffen. A few small wagon mines supplied coal for local domestic use during the Depression and there was a slight increase in demand during World War II. With the closing of the Giffen mine in 1946 coal production in the area virtually ceased.

The Great Falls field produced almost 36 million tons of coal during the period from 1885 to 1955 which was approximately 23 percent of the total state production. Nearly a third of the total tonnage was mined during the first two decades of this period. Over 15 million tons was produced during the life of the field by just three of the largest mines: the Castner-Anaconda mine at Belt (7.5 million tons over 25 years); the Lochray-Anaconda mine at Belt (2.3 million ton over 10 years); and the Cottonwood mine near

Stockett (5.4 million tons over 15 years). The Great Falls field also employed most of the state's 3,000 to 4,000 coal miners (Silverman & Harris 1967).

Future energy needs may result in new coal development in the area but this would most likely be through strip mining methods employing far fewer men than did the underground mines. The underground coal mining boom of the 1910s and 1920s was a unique chapter of the region's history that probably will not be seen again.

SITE DESCRIPTION

Site Identification: 24CA92 - The Guistis Mine

Site Location: SW1/4 NE1/4 Section 19, T19N, R5E

Elevation: 1116 m

Site Area: 1000 m^2

Site Description: The Guistis Mine is located on the east-facing hillside and on the west side of the county road which runs between the community of Centerville and the town of Stockett. The site consists of a coal slack dump running down from two open adits at the top of the slack dump (Figure 2). Vegetation on the site surrounding the slack dump consists of Rhus, cactus, sagebrush and various range grasses. Water for the mining operation could have been obtained from Cottonwood Creek which flows just below the site area. A small spring-fed flow of water runs from the top of the slack dump down to Cottonwood Creek.

Structures and Cultural Materials: No mining related structures remain on the site. All that remains from what was once a fairly extensive mining operation, are two open adits and a coal slack dump (Figure 3). A few pieces of lumber debris are scattered on the slack dump and one piece of tramway track was observed sticking out of the coal slack in front of the main adit portal. Two vertical posts were also observed on each side of the adit portal.

The only other item found on the site relating to the original mining operation is an electric powered winch located just below the adits and adjacent to the north edge of the slack dump (Figure 4). A plate on the winch reads: "MANF BY The English Iron Works Co Kansas City - MO size 80 1/2 No 2604". However, no date of manufacture was found.

Historic Development: The land on which the site is located was originally patented to Alfred G. Ladd of Choteau County under a cash entry patent (#1990) on January 5, 1892. There is no record that he did any work on developing the mine on the site and apparently sold the land to William Staimsby and James Latham Sr. who then first opened the mine during the early 1900s. Some years later Staimsby sold out and the mine was taken over by Jay Yatsko who ran the mine with his son, Dennis Yatsko, for the next 18 years. It was then bought by Brian Guistis who operated it for a few years until it closed down for good in the 1960s.

Although the mine was not one of the major operations in the area, it was a fairly extensive operation and somewhat larger than many of the smaller "wagon" mines common to the area. According to local informants, the main adit ultimately tunneled through the entire hillside and emerged at Sand Coulee, over a mile away. The mine was said to have produced an average of 25 to 30 tons of coal a day which filled some 10 to 12 railroad cars a week. About 15 men were usually employed in the mine.

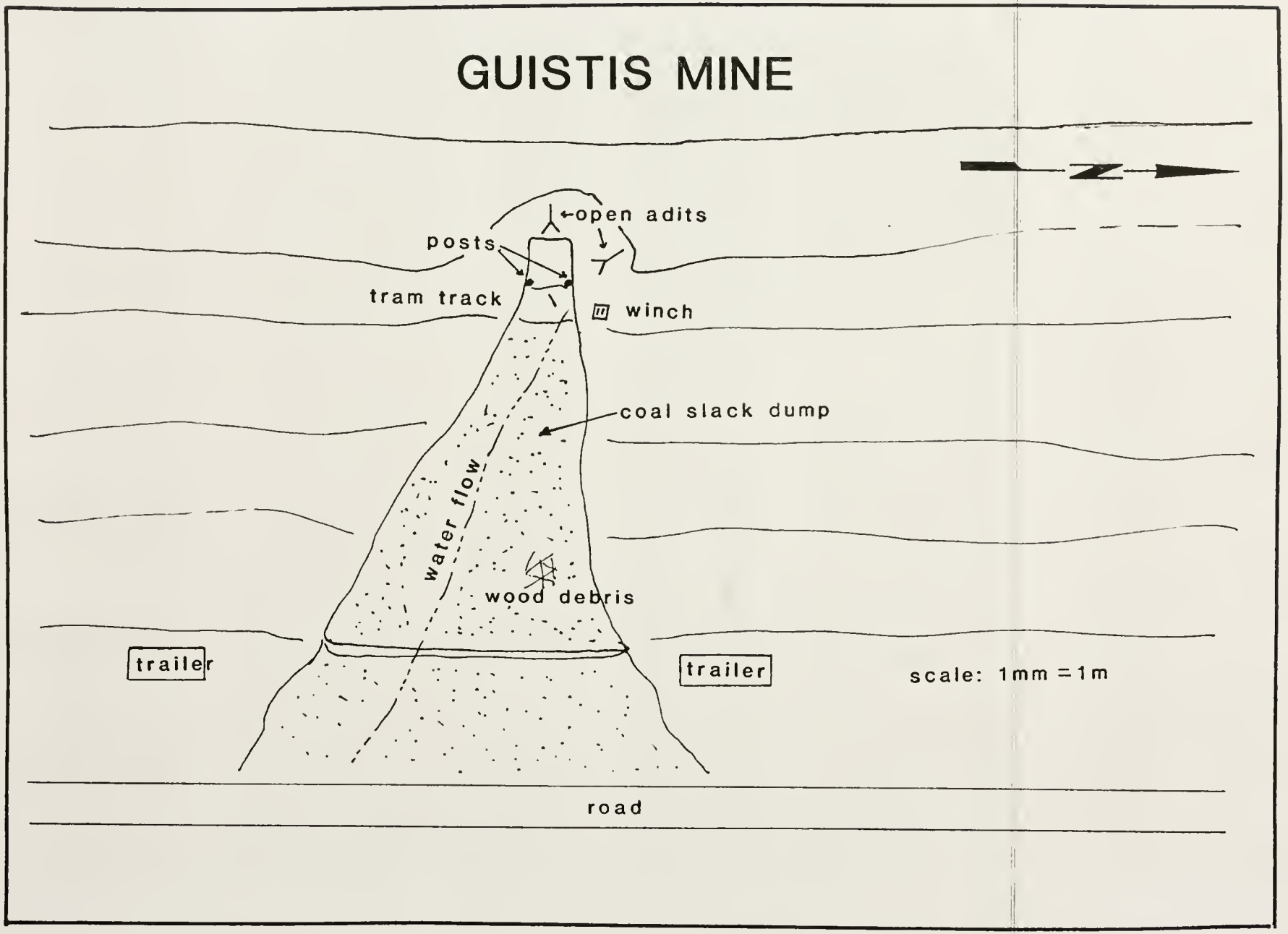

GUISTIS MINE
N
open adits
posts
tram track
winch
coal slack dump
water flow
wood debris
trailer
trailer
scale: 1mm = 1m
road

Figure 2

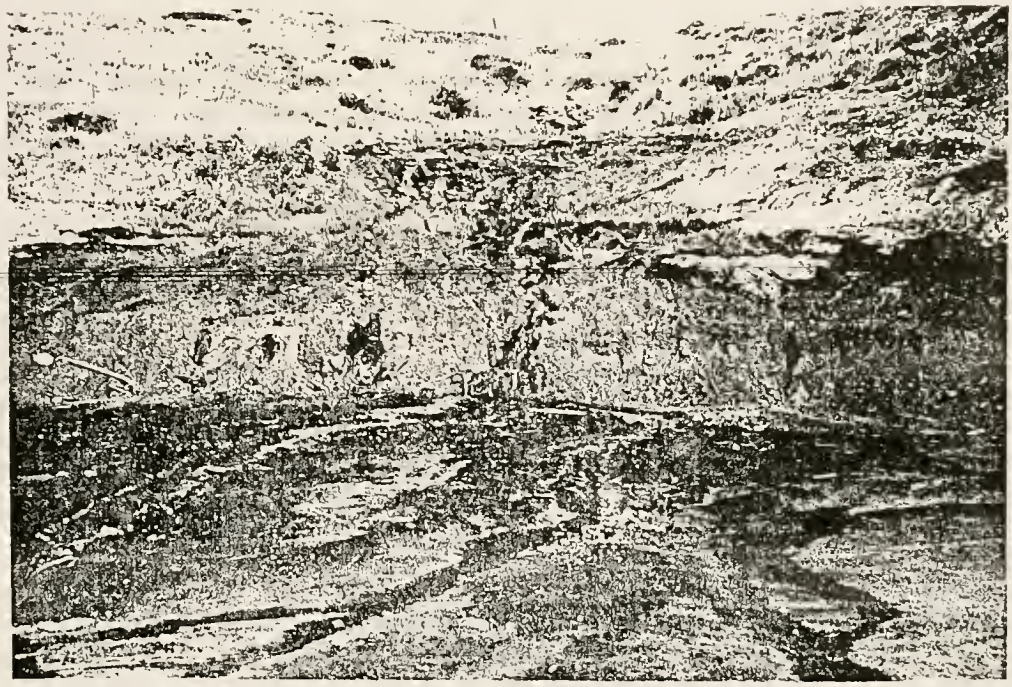


Figure 3. Photograph of Coal Slack Dump.

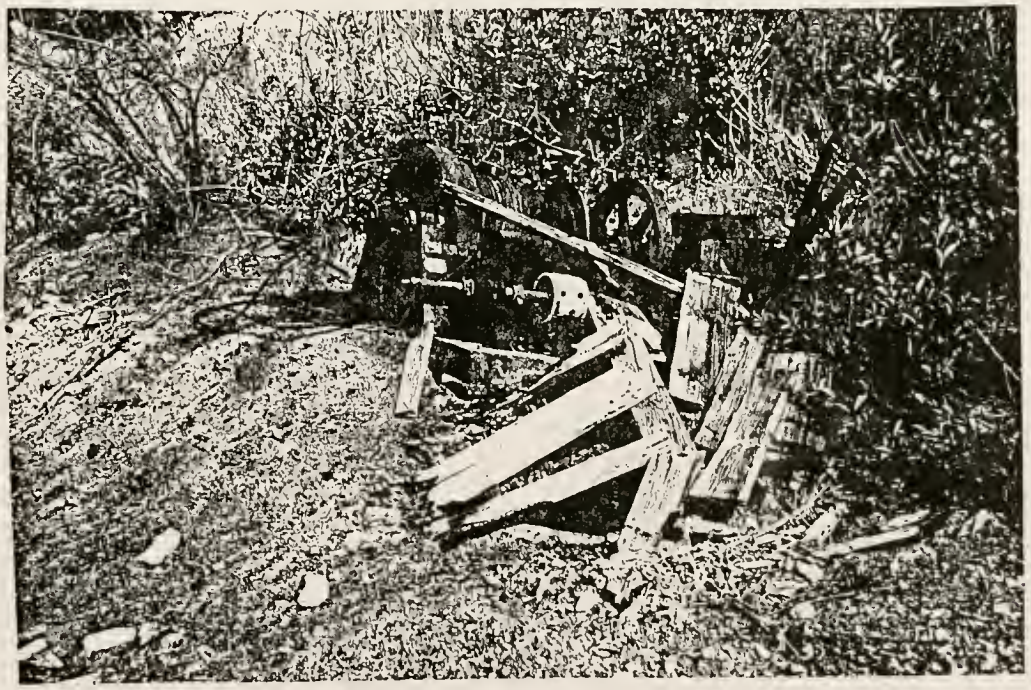


Figure 4. Photograph of the Winch.

Curiously, mule-drawn tram cars were employed in the mine throughout its operation. The tram cars were then lowered down the hillside with the electric winch and run through a tunnel under the road to a tipple located on the east side of the road. A crane on top of a tressle hauled the coal to the top of the tipple and then it was gravity fed to the railroad cars which ran underneath the tipple. This system was reported to be in operation until the early 1940s when the tipple was town down. The mine, however, continued to operate intermittently until the 1960s (Latham 1982; Yatsko 1982; Guistis 1982).

Evaluation: Only the two open adits, the winch and the coal slack dump remain on the site. It is unlikely that further work on the site would reveal additional information on mining history and technology during this period.

National Register Statement: Almost nothing remains on the site from the original mining operation and thus the site lacks integrity. It would not appear to meet the eligibility requirements for listing on the National Register of Historic Places.

Management Recommendations:

The Department of State Lands considers the ruins of the Guistis Mine to be a safety and health hazard and plans to close open adits and reclaim disturbed areas. This plan would not have a detrimental effect on the site since it is not eligible for listing on the National Register of Historic Places. The site has been recorded, mapped and photographed and no further work is recommended.

SUMMARY AND RECOMMENDATIONS

The Guistis Mine (24CA92) was recorded, mapped, photographed and historic records researched. The Guistis Mine is not recommended as eligible for listing on the National Register of Historic Places and therefore the reclamation plans of the State Department of Lands will not have a detrimental effect on the site. The site area was also carefully examined for prehistoric cultural resources. No prehistoric cultural remains were found.

The evaluation of this report concurs with the DSL that the open adits and the coal slack dump pose a threat to public safety and should be reclaimed or removed. It is recommended that the DSL plans be allowed to proceed on schedule. However, if subsurface prehistoric or historic cultural materials are revealed during the reclamation work, the Mineral Research Center in Butte and the Montana Historic Preservation Office in Helena should be notified immediately.

BIBLIOGRAPHY

Burlingame, Merrill G.
1980 The Montana Frontier. Big Sky Books, Montana State University, Bozeman.

Campbell, Marius R. (editor)
1907 Contributions to Economic Geology, Part II - Coal, Lignite, and Peat. Department of the Interior - U.S. Geological Survey, Bulletin No. 316. Government Printing Office, Washington, D. C.

Cascade County Historical Society
1981 Stone Age to Space Age in 100 Years - Cascade County History and Gazetteer. Cascade County Historical Society, Great Falls.

Chadwick, Robert A.
1973 "Coal: Montana's Prosaic Treasure", Montana: The Magazine of Western History 23(4): 18-31.

DeVoto, Bernard
1953 The Journals of Lewis and Clark. Houghton Mifflin Co., Boston.

Fisher, Cassius A.
1909 Geology of the Great Falls Coal Field. Department of the Interior - U.S. Geological Survey, Bulletin 356. Government Printing Office, Washington, D.C.

Guistis, Brian
1982 Personal Interview. September 6, Stockett, Montana.

Latham, William
1982 Personal Interview. September 17, Great Falls, Montana.

Malone, Michael and Richard Roeder
1976 Montana - A History of Two Centuries. University of Washington Press, Seattle.

Montana Fish and Game Commission
1975 Montana Historic Preservation Plann with Historic Sites Compendium. Recreation and Parks Division, Montana Department of Fish and Game, Helena.

Morgan, Thomas
1966 "History of Coal Mining in Montana", Proceedings of the First Montana Coal Resources Symposium. Montana Bureau of Mines and Geology, Special Publication 36. Butte, Montana.

Rowe, Jesse Perry
1908 Some Economic Geology of Montana. University of Montana, Bulletin No. 50, Geological Series No. 3. Missoula.

State of Montana Annual Reports of the Inspector of Mines for the years: 1893, 1894, 1895, 1897, 1898, 1900, 1903, 1905, 1906, 1907-8. Copies from the Historical Society of Montana Library.

Silverman, Arnold J. and William L. Harris 1967 Stratigraphy and Economic Geology of the Great Falls-Lewistown Coal Field, Central Montana. Montana Bureau of Mines and Geology, Bulletin 56. Butte, Montana.

Stober, Eva Lesell
1979 Belt Valley History - 1877-1979. Advanced Litho Printing. Great Falls, Montana.

U.S. Department of the Interior - Bureau of Land Management
n.d. Montana Plat Maps and Historical Indexes for T19N R4E, T19N R5E, and T19N R6E.

Yatsko, Dennis
1982 Personal Interview. September 6, Stockett, Montana.

APPENDIX A

SITE FORM NO. 1

Montana Tech Alumni Foundation
MINERAL RESEARCH CENTER
Post Office Box 3708 • Butte, Montana 59701

Cultural Resource Inventory

1. Site Number: 24CA92
2. County: Cascade
3. State: Montana
4. Site Name: Guistis Mine
5. Other Names For Site: Staimsby Mine & Latham Mine
6. City or Town: Centerville, Mont. Vicinity of: X
7. Map Reference: USGS Stockett, Mont. N4715-W11100/15 1955 1:62500
8. Township & Range Number: T19N R5E
9. Section Number: ¼ SW ¼ NE ¼ Sect 19
10. Latitude: 47° 23' 20"
11. Longitude: 111° 07' 30"
12. U.T.M. Reference: 12 | 489200 | 5247800
Zone | Easting | Northing
13. Publications:

Surface Ownership
15. Federal: State: Private: X

16. Mineral Ownership
Federal: State: Private: X
All Minerals:
Coal Only:

17. Project Name: DSL Mine Reclamation

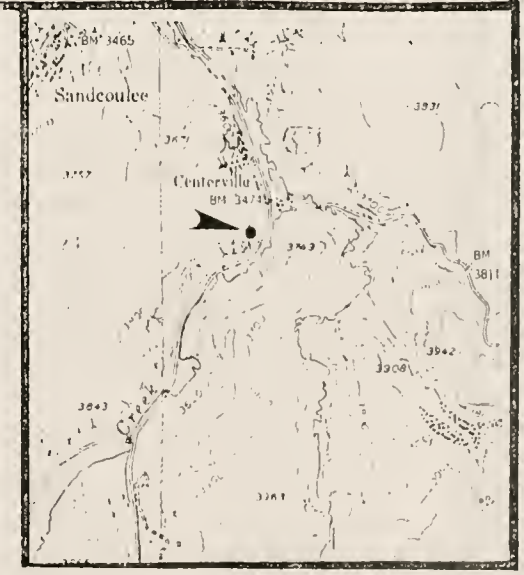
18. National Register
On:
Nominated:
Determined Eligible:
Recommended:
Need Data:
Not Eligible: X

19. Site located by & Date: P. Anderson 9/9/82
20. This Record by & Date: P. Anderson 9/17/82
21. Revisions by & Date:

22. Site Category
Historic: X
Prehistoric:
Other specify:

23. Site Status
Survey:
Photo/map: X
Tested:
Excavated:
Other specify:
Comment:

14. Narrative of site location and access to site
The site is located on the west side of the county road between Centerville and Stockett, Mont. and is about ¼ mile south of Centerville.



SITE FORM NO. 2

SETTING AND CONDITION OF SITE

Site Name Guistis Mine

Phytogeography

1. Elevation
1116 Meters 3660 Feet

2. Distance, direction and nature of nearest water source.
Cottonwood Creek runs below the site 100 m to the east.

3 Soil (color, character, depth)

5 General vegetative community
rangeland

6 On-site vegetation
Rhus, sagebrush, cactus and range grasses

4 Geographic land form/ topography character/ slope / site faces.
The site is on an east facing slope on the west side of the shallow Cottonwood Creek valley.

Site condition

7 Natural deterioration

Degree		Type	
none		sheetwash	
light		gully	
moderate		wind erosion	
heavy	X	animal disturb	
complete		natural weathering	X

8. Human Disturbance (real/potential)

Degree		Type	Distance From
light		buildings	
moderate		towers	
complete	X	roads	
unknown			

Comments The DSL reclamation will remove or reclaim the remnants of the site.

9. Environmental/Economic threats to site

Private development		Public works project	
Zoning		Mining	
Vandalism, deterioration	X	Other (specify)	

Comments The Department of State Lands plans to block, plug or backfill open adits and eliminate dumps and disturbed areas through contour landscaping, adding topsoil and revegetating.

Site Name: Guistis Mine

HOMESTEAD/RANCH/FARM GENERAL FORM No.

1. General Description: (no. of buildings, general use, etc.)
None

Key to site sketch map and individual feature/building forms.

2. Historic Ownership:
(1)

(2)

(3)

3. Date of construction:

4. Use (present, original):

5. Names Associated with Title:

Name (last name first)	Dates(s)	Deed Book Ref.

6. Track Book Reference:

Name	Type of Entry HE, CE, DLE, other	Serial No.	Patent No.	Representation on GLO Plat
Alfred G. Ladd	CE Pat.		1990	

10. Noted events associated with property or with persons associated with property:
Alfred apparently sold the land to William Staimsby and James Latham Sr. who opened the first coal mine on the property. Around 1946 the property was acquired by Jay Yatsko who operated the mine until the early 1960s when it was sold to Brian Guistis.

D1c

CULTURAL RESOURCE FORM NO. 6

Site Name Guistis Mine

1. Photos:

Accession	Description	Direction
1.	Proof #1 - photos 1-6	
2.		
3.		
4.		

2. National Register Statement:
The mine related structures have been either removed or dismantled. The only remains on the site consist of two open adits and a coal slack dump and thus the site lacks integrity. The site does not meet the criteria for listing on the National Register of Historic Places.

3. Recommendations:

The Department of State Lands plans to close the open adits and eliminate the dumps and other disturbed areas through contouring and revegetation. The ruins of the mine have been recorded, mapped and photographed and further work on the site would not reveal additional information. No further field work is recommended for this site.

GUISTIS MINE